

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re application of:

**Uri MAHLAB**

Application No.

**09/936,440**

Filed:

**January 25, 2002**

**METHOD AND APPARATUS FOR ROUTING  
DATA-CARRYING OPTICAL SIGNALS**

Examiner: Agustin Bello  
Art Unit: 2613

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**REPLY BRIEF**

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Attorney Docket: **MAHLAB=2**

Date: September 28, 2010

Appellant submits the following remarks in response to the Examiner's Answer mailed on July 28, 2010.

On page 15, first full paragraph of the Examiner's Answer, the Examiner asserted that "the declaration did nothing to introduce arguments that had not already been discussed *ad nauseum* and refuted." Appellant's response is that the declaration introduced **evidence** of how one of ordinary skill in the art would have interpreted the claim language, but the Examiner has never considered it as such. That type of evidence is proper and cannot be disregarded.

On page 15, last four lines of the first paragraph, and the paragraph bridging pages 15 and 16, the Examiner maintains that the elements of the '501 patent may receive the broadest interpretation and as such they may be considered as elements having routing capabilities. In particular, the Examiner supports his theory by relying on the disclosure provided in the specification that "The network element in accordance with the present invention is a device provided with routing capabilities, e.g. a router, and the like. For the sake of convenience such a network element will be referred to hereinafter as a "router", but this term should be understood to encompass also any other device having switching and forwarding capabilities" (page 4, lines 1-5).

Appellant's response is that the Examiner has overlooked other definitions which co-exist in the specification together with the definition provided for "a network element having routing capabilities". For example, the immediate continuation of the above sentence is "The addressing information required for establishing such an address for routing the optical data signals is derived from a combination of the optical addressing signals" (page 4, lines 5-7). In other words, such a network element should be able to route the optical data signals based on a combination of the optical addressing signals. So the proper interpretation

that would have been given by one of ordinary skill in the art to that paragraph would in fact have been that a network element of the present invention is a device having routing, *i.e.*, switching and forwarding, capabilities, which use a combination of optical addressing signals for routing/forwarding the optical data signals. The asserted theory developed by the Examiner does not support that definition.

On page 15, last sentence of the first full paragraph, the Examiner asserts that “Appellant’s specification fails to clearly define the bounds of these terms.” Appellant’s response is that in addition to the above-explained and quoted definition, there are other examples in the specification which explicitly state what is the meaning of “routing”:

The routing data comprises address information which is used to route the data through a series of switching nodes to its destination. Each switching node decodes the address information by processing the header information and switching the packet onto a proper communication link (usually using a routing table that is stored in each switching node). Page 1, lines 13-17.

It is another object of the present invention to provide a method and apparatus for routing high speed optical data by using a control header which comprises an optical routing address that is transmitted optically. Page 3, lines 10-11.

Thus, Appellant respectfully submits that there is more than enough information provided in the specification to provide one of ordinary skill in the art with an understanding of the metes and bounds of the claim terms “network elements” and “routers.”

On page 17, lines 1-4, the Examiner asserts that “to claim that a network element has routing capabilities fails to distinguish the claimed invention from Barnsley because, as evidenced above, practically every element in an optical network has routing capabilities.” Appellant’s response is that first, the Examiner has provided no evidence; he has made only unsupported assertions on which he bases the rejections. Second, and more importantly, assuming Appellant’s interpretation of the claim terms “network elements” and

“routers” is correct, and that interpretation is the one given to the claims here, then not every element in an optical network has such routing capabilities.

On page 17, first full paragraph, the Examiner asserts that Appellant’s argument that Barnsley fails to teach that data and control signals must arrive together at the same node “simply falls apart”. Appellant’s response is that in Barnsley, the node which has routing capabilities as stipulated by the present invention is labeled “1”. As clearly shown in Fig. 1, the data and control signals ***do arrive together*** at node 1 along path 2. The data signals from the optical data generator 4 are combined with the control signals from the header generator 5 at the multiplexer (WDM coupler 6). Col. 4, lines 5-7. It is those combined signals that arrive together at node 1. Not until the combined signals pass through the splitter 7 within the node 1 are any part of the signals separated. And even then, splitter 7 divides only “a small proportion (typically a few percent)” of the combined signal 4a+5a of the incoming signal and feeds that tapped signal to a band-pass filter 14 via the optical amplifier 15 to retrieve the control signal 5a from the combination of 4a and 5a optical signals, thereby enabling the use of the latter by optical switch 8. Col. 4, lines 17-21. The other branch of splitter 7 conveys a combination of the control signal 5a ***along with the data signal 4a*** on which it overlaps, which in turn is fed to the optical switch 8. Col. 4, lines 28-30, Fig.1.

On page 4, lines 14-16 of the first paragraph in section 2 of the Examiner’s Answer, the Examiner asserts that the step of “providing a combination of said optical addressing signals to provide addressing information required for establishing an address for routing the optical data signals” is taught at col. 1, lines 21-31 of Barnsley. Appellant’s response is that, not surprisingly, this citation has nothing to do with the Barnsley disclosed invention, as it is part of the “field of invention” part of the disclosure and explains that each

packet includes, *apart from the data itself*, a header containing addressing and sequence (control) information”. This contradicts Appellant’s invention because it states that the addressing information is contained in each packet *together* with the data itself, whereas the optical addressing signals of the present invention are conveyed separately from their associated optical data signals along the at least one optical fiber.

On page 5, line 5-6, the Examiner takes the position, with respect to claim 45, that the data signals generated at element 4 in Figure 1 were generated by a plurality of different network elements, where the different network elements are the light source (the laser) and the modulator, and asserts that such elements meet the claimed “said optical data signals being conveyed separately from their associated optical addressing signals along said at least one optical fiber were generated at a plurality of different network elements.” Appellant’s response is that this is incorrect. The light source does not generate any data. It is only the modulator that modulates the light received thereat with the required data, so that the Examiner has failed to show that Barnsley teaches in any way generation of the optical data signals at a plurality of different network elements.

For at least these reasons and for the reasons set forth in Appellant’s Appeal Brief, Appellant respectfully submits that the rejections in the Final rejection should be reversed.

Respectfully submitted,

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